NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

SEDIMENT BASIN

(No.)
CODE 350

DEFINITION

A basin constructed to collect and store debris or sediment.

PURPOSES

- Preserve the capacity of reservoirs, wetlands, ditches, canals, diversion, waterways, and streams
- Prevent undesirable deposition on bottom lands and developed areas
- Trap sediment originating from construction sites or other disturbed areas
- Reduce or abate pollution by providing basins for deposition and storage of silt, sand, gravel, stone, agricultural waste solids, and other detritus

CONDITIONS WHERE PRACTICES APPLY

This practice applies where physical conditions or land ownership preclude treatment of a sediment source by the installation of erosion-control measures to keep soil and other material in place or where a sediment basin offers the most practical solution to the problem.

CRITERIA

Sediment basin design and construction shall comply with all applicable federal, state and local laws and regulations.

In locating basins, careful considerations shall be given to preserving natural areas, fish and wildlife habitat, woodland, and other environmental resources. If basin construction will adversely affect such values, concerned public agencies and private organizations shall be consulted about the project.

The capacity of the sediment basin shall equal the volume of sediment expected to be trapped at the site during the planned useful life of the basin or the improvements it is designed to protect. If it is determined that periodic removal of sediment will be practicable, the capacity may be proportionately reduced.

The design of dams, spillways, and drainage facilities shall be according to NRCS Conservation Practice Standard 378 (Pond), Conservation Practice Standard 410 (Grade Stabilization Structure) or according to the requirements in NRCS TR-60 (Earth Dams and Reservoirs), as appropriate for the class and kind of structure being considered.

Temporary basins having drainage areas of 5 acres or less and a total embankment height of 5 feet or less may be designed according to NRCS Conservation Practice Standard 638 (Water And Sediment Control Basin). For sediment control, the basin shall be designed to detain runoff from a 10-year, 24-hour rainfall event for at least 10-hours.

All disturbed areas shall be treated as soon as possible after construction ends to control erosion and prevent excess sediment from leaving the site.

Provisions shall be made for dewatering sediment pools if necessary for safety and vector control.

Fencing and other safety measures shall be installed as necessary to protect the public.

Due consideration shall be given to good visual resource management.

Sediment basins designed to meet the sedimentation pond regulations of the Surface Mining Control and Reclamation Act of 1977 shall also, in addition to NRCS

standards, be designed to meet the following:

1. Provide a minimum of 3-years sediment storage volume.
2. Sediment storage volume equal to 0.1 acre feet per acre of disturbed area within the upstream drainage area, except that sediment volumes of no less than 0.035 acre-foot for each acre may be used where other sediment control measures equals the reduction in sediment storage volume.
3. Less than 24-hour theoretical detention time may be approved by regulatory authority to not less than 10-hours by demonstrated mechanical improvements or to any level by chemical treatment that meet effluent limitations.
4. The dewatering device shall not be located at the lower elevation than the maximum elevation of the design sediment storage volume.
5. Sediment shall be removed from sedimentation ponds when the volume of sediment accumulates to 60 percent of the required sediment storage volume.
6. Emergency Spillway shall be at or above the 10-year, 24-hour precipitation event.
7. An appropriate combination of principal and emergency spillway shall be provided to discharge safely the runoff from a 25-year, 24-hour precipitation event.
8. The emergency spillway shall be a minimum of one foot above the crest of the principal spillway.
9. If embankment has more than 20 feet between upstream toe and the crest of the emergency spillway or has a storage volume of 20 acre feet or more, an appropriate combination of principal and emergency spillway shall be provided to safely discharge the runoff resulting from a 100-year, 24-hour precipitation event.

CONSIDERATIONS

Large sediment basins may have an effect on the peak discharge rate from a watershed. Planners should consider this, and take steps to mitigate any potential negative effects this may have on riparian habitat downstream from the structure.

Visual aesthetics may be a concern, especially in urban or suburban areas. To address these concerns, the basin could be designed to blend with the surrounding topography, or plantings could be proposed to screen the view from surrounding homes or buildings.

The nesting success and survival rate of ground-nesting species will increase if mowing is delayed until after the nesting season.

Using native species for re-vegetation will increase habitat diversity.

PLANS AND SPECIFICATIONS

Plans and specifications for installing sediment basins shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

Provisions for controlling erosion and reducing sediment loss will be included. Specify rates of seed, mulch, and fertilizer, appropriate planting dates and method(s) of establishment.

The seedbed preparation and treatment and the seeding mixture and methods shall be as outlined in the Standards and Specifications for CRITICAL AREA PLANTING.

OPERATION AND MAINTENANCE

The sediment basin will be inspected after major storms for damage that may affect its function and performance. Any damage will be promptly repaired.

Mow as need to maintain adequate vegetative cover and to prevent the establishment of undesirable species.